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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/079,850	02/22/2002	Toshio Inaji	56937-047	7536

7590 01/09/2006

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EXAMINER	
RODRIGUEZ, GLENDA P	

ART UNIT	PAPER NUMBER
2651	

DATE MAILED: 01/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/079,850	INAJI ET AL.	
	Examiner	Art Unit	
	Glenda P. Rodriguez	2651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 September 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4,5,7,8,10,11,13,14,16,17,19 and 20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4,5,7,8,10,11,13,14,16,17,19 and 20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *9/26/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 4, 7, 10, 13, 16, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Patton et al. (US Patent No. 5, 654, 840) in view of Carnegie et al. (US Patent No. 6, 196, 047).

Regarding Claim 1 and 4, Patton et al. teach a disk storage apparatus comprising:

An actuator for positioning a head with respect to a disk (Col. 4, L. 64-67);

A drive section for driving said actuator (Col. 1, L. 50-67);

A position detection section for producing position error information corresponding to the current position of said head from servo information which has been previously recorded on said disk and is detected by said head (Col. 6, L. 10-40);

A position control section for producing position control information corresponding to the position error information by said position detection section (Col. 6, L. 10-40);

A voltage detection section for detecting a voltage generated in driving said actuator and outputting a voltage signal (Col. 6, L. 55-67 and Col. 7, L. 27-39 and L. 50-60 and Col. 9, L. 63-Col. 10, L. 9 and Col. 10, L. 58-67);

A disturbance estimation section estimating the magnitude of a disturbance exerted on said head from the voltage by said voltage detection section and a drive signal from said drive section, and producing disturbance estimation information signal (Col. 6, L. 55-67 and Col. 7, L. 27-39 and L. 50-60 and Col. 8, L. 56-65);

A correction section for correcting the position control information by said position control section with the disturbance estimation information by disturbance estimation information by said disturbance estimation section and producing said drive signal (Col. 6, L. 55-67 and Col. 7, L. 27-39 and L. 50-60 and Col. 8, L. 56-65. Patton et al. indicates that it calculates the position error signal, signifying the amount the head is off-track and how much the head has to move to be in the track centerline.); and

A disturbance monitor section for monitoring the disturbance estimation information by said disturbance estimation section, and prohibiting a record by said head said disturbance estimation information exceeds an allowable range (Col. 6, L. 55-67 and Col. 7, L. 27-39 and L. 50-60 and Col. 9, L. 63-Col. 10, L. 9 and Col. 10, L. 58-67).

However, Patton does not explicitly teach wherein the estimation and disturbance monitoring sections are for torque measurements. Carnegie et al. teaches this limitation in Col. 5, L. 21 to Col. 7, L. 15. It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Patton's invention with the teaching of Carnegie et al. in order to

improve torque measurement systems as described in the Summary of the Invention of Carnegie et al.

Regarding Claims 7, 10, 13, 16 and 19, Patton et al. teach a disk storage apparatus comprising:

An actuator for positioning a head with respect to a disk (Col. 4, L. 64-67);

A drive section driving said actuator (Col. 1, L. 50-67);

A voltage detection section for detecting a voltage generated in driving actuator, and outputting a voltage signal (Col. 6, L. 55-67 and Col. 7, L. 27-39 and L. 50-60 and Col. 9, L. 63-Col. 10, L. 9 and Col. 10, L. 58-67);

A position detection section for producing position error information corresponding to the current position of said head from servo information which has been previously recorded on said disk and is detected by said head (Col. 6, L. 10-40);

A velocity/disturbance estimation section for estimating a head moving velocity and the magnitude of a disturbance exerted on said head from the voltage signal by said voltage detection section and from a drive signal in said drive section, and producing velocity estimation information and disturbance estimation information (Col. 6, L. 39-54);

A position control section for producing position control information corresponding in principle to the position information by said position detection section and adding the velocity estimation information by said

velocity/disturbance estimation section to said position error information according to conditions produce control information (Col. 6, L. 10-40);

A correction section for correcting the position control information by said position control section with disturbance estimation information by said velocity/disturbance estimation section and producing said drive signal (Col. 6, L. 55-67 and Col. 7, L. 27-39 and L. 50-60 and Col. 8, L. 56-65. Patton et al. indicates that it calculates the position error signal, signifying the amount the head is off-track and how much the head has to move to be in the track centerline.);

A disturbance monitor section for monitoring the disturbance estimation information by said velocity/disturbance said disturbance estimation information exceeds an allowable range, making valid said velocity estimation information with respect to said position error information in said position control section (Col. 6, L. 55-67 and Col. 7, L. 27-39 and L. 50-60 and Col. 9, L. 63-Col. 10, L. 9 and Col. 10, L. 58-67).

However, Patton does not explicitly teach wherein the estimation and disturbance monitoring sections are for torque measurements. Carnegie et al. teaches this limitation in Col. 5, L. 21 to Col. 7, L. 15. It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Patton's invention with the teaching of Carnegie et al. in order to improve torque measurement systems as described in the Summary of the Invention of Carnegie et al.

Allowable Subject Matter

3. Claims 2, 5, 8, 11, 14, 17 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The reasons for allowable subject matter are found in the previous Office Action dated April 21, 2005.

Response to Arguments

4. Applicant's arguments with respect to claims 1, 2, 4, 5, 12, 15, 18 and 21 have been considered but are moot in view of the new ground(s) of rejection due to the newly amended Claims.

5. Examiner acknowledges that Claims 3, 6, 9, 12, 15, 18 and 21 have been canceled in the Amendment filed 9/26/05.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. 6, 982, 848 to Inaji et al., 6, 950, 274 to Inaji et al., 6, 903, 896 to Miyata et al., 5, 737, 483 to Inaji et al., 5, 710, 500 to Matsuo et al. 5, 467, 004 to Matsuo et al., 5, 378, 976 to Inaji et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenda P. Rodriguez whose telephone number is (571) 272-7561. The examiner can normally be reached on Monday thru Thursday: 7:00-5:00; alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

gpr
01/03/06.

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